What is claimed is:

1. A method of forming a multi-layer semiconductor structure, the method comprising:

disposing a first laminate over a first surface of a first semiconductor structure;

disposing a second laminate over a first surface of a handle member;

attaching the first laminate to the second laminate to provide a first semiconductor-handle complex having a substrate portion;

removing at least a fraction of the substrate portion of the first handle-semiconductor complex to provide a handle-semiconductor complex having first and second opposing surfaces;

positioning a first one of the first and second opposing surfaces of the handle-semiconductor complex over and in a contact relationship with a first surface of a second semiconductor structure; and

attaching a first one of the first and second opposing surfaces of the handle-semiconductor complex to a first surface of a second semiconductor structure.

2. The method of claim 1 further comprising releasing at least a portion of one of the first and second laminates without releasing the first one of the first and second opposing surfaces of the handle-semiconductor complex from the first surface of the second semiconductor structure.

3. The method of claim 1 wherein attaching a first one of the first and second opposing surfaces of the handle-semiconductor complex to the first surface of the second semiconductor structure comprises bonding a second one of the first and second opposing surfaces of the handle-semiconductor complex to the first surface of the second semiconductor structure using a predetermined bonding material.

4. The method of claim 3, wherein disposing the first laminate over the first surface of the first semiconductor structure includes disposing a first laminate layer over the first surface of the first semiconductor structure wherein the first laminate layer is provided

having a reaction rate to a predetermined release agent which is greater than a reaction rate of the predetermined bonding material to the predetermined release agent.

5. The method of claim 4, wherein disposing the first laminate further includes disposing a second laminate layer over the first laminate layer.

6. The method of claim 5, wherein disposing the first laminate further includes disposing a third laminate layer over the second laminate layer.

7. The method of claim 4, wherein disposing the first layer of the first laminate includes disposing at least one of a first layer of zirconium; and a first layer of aluminum.

8. The method of claim 5, wherein disposing the second layer of the first laminate includes at least one of:

disposing a layer comprising copper over the layer of zirconium;

disposing a layer comprising gold over the layer of zirconium;

disposing a layer comprising tungsten over the layer of zirconium; and

disposing a layer comprising a metal alloy over the layer of zirconium.

9. The method of claim 6, wherein disposing the third laminate layer of the first laminate includes at least one of:

disposing a layer comprising an inorganic dielectric over the second laminate layer;

disposing a layer comprising copper over the second laminate layer; and

disposing a layer comprising a polymer over the second laminate layer.

10. The method of claim 3, wherein disposing the second laminate over the first surface of the handle member further includes disposing a first laminate layer over the first surface of the handle member.

11. The method of claim 10, wherein disposing the second laminate further includes disposing a second laminate layer over the first laminate layer.

12. The method of claim 11, wherein disposing the second laminate further includes disposing a third laminate layer over the second laminate layer.

13. The method of claim 12, wherein:

a first one of the first and second layers of the first laminate corresponds to a release layer; and

a first one of the first and second layers of the second laminate corresponds to a release layer.

14. The method of claim 1, wherein attaching the first laminate to the second laminate comprises at least one of:

attaching the first laminate to the second laminate using a temperature activated method;

attaching the first laminate to the second laminate using a mechanically activated method; and

attaching the first laminate to the second laminate using an electrically activated method.

15. The method of claim 2, wherein releasing at least one of the first and second laminates comprises disposing the multi-layer semiconductor structure into a solution chemically reactive with the at least one layer of at least one of the first and second laminates.

16. The method of claim 1, wherein releasing at least one of the first and second laminates comprises destroying the structural integrity of at least one layer of at least one of the first and second laminates.

17. The method of claim 1, wherein disposing the first laminate over the first surface

of the first semiconductor structure includes disposing the first laminate over a first surface of at least a portion of a first semiconductor wafer.

18. The method of claim 1, wherein disposing the first laminate over the first surface of the first semiconductor structure includes disposing the first laminate over a first surface of at least a portion of a first semiconductor die element.

19. A laminate adapted for releasably coupling a handle member to a semiconductor structure, the laminate comprising:

a first layer adapted to attach to a first surface of the semiconductor structure;

a second layer disposed over the first layer; and

a third layer disposed over the second layer, wherein at least one of the first, second and third layers includes a material having a predetermined reaction rate to a selected release agent.

20. The laminate of claim 19, wherein the first layer corresponds to a fusing layer.

21. The laminate of claim 20, wherein a first one of the second and third layers corresponds to a release layer.

22. The laminate of claim 21, wherein the third layer corresponds to the release layer.

23. The laminate of claim 22 wherein the third layer is adapted to attach to a first surface of a handle member.

24. The laminate of claim 22, wherein the third layer comprises a first one of zirconium and aluminum.

25. The laminate of claim 24, wherein the first layer comprises copper.

26. The laminate of claim 25 wherein the second layer comprises tantalum (Ta).

27. The laminate of claim 19 wherein:
the third layer comprises tantalum (Ta);
the second layer comprises one of Zirconium (Zr) and aluminum (Al); and
the first layer comprises copper (Cu).

28. A method of providing a multi-layer semiconductor structure, the method comprising:
providing a first semiconductor structure having first and second opposing surfaces; and
disposing a laminate layer over a first one of the first and second opposing surfaces of the first semiconductor structure to provide a first semiconductor structure having a laminate layer disposed thereon.

29. The method of claim 28 further comprising:
disposing a handle member over the laminate layer.

30. The method of claim 29 further comprising:
a substrate on a second one of the first and second opposing surfaces of the first semiconductor structure.

31. The method of claim 30 further comprising:
removing at least a portion of the substrate from the second one of the first and second opposing surfaces of the first semiconductor structure to provide a semiconductor-handle complex.

32. The method of claim 31 further comprising:
providing a second semiconductor structure); and
aligning a first surface of the semiconductor-handle complex with a first surface of the second semiconductor structure.

33. The method of claim 32 further comprising:

bonding the first surface of the second semiconductor structure to the first surface of the semiconductor -handle complex.

34. The method of claim 33 further comprising:

removing the handle member and the laminate layer.

35. The method of claim 28 wherein providing a first semiconductor structure having first and second opposing surfaces comprises:

a substrate having first and second opposing surfaces; and

a first semiconductor structure over a first one of the first and second surfaces of the substrate.

36. The method of claim 28 wherein providing a first semiconductor structure having first and second opposing surfaces comprises:

providing a semiconductor structure comprised of a plurality of thin film semiconductor layers.

37. The method of claim 29 wherein disposing a handle member over the laminate layer comprises:

providing a handle substrate;

disposing a film layer over at least one surface of the handle substrate.

38. The method of claim 37 wherein the film layer is provided from one of: silicon nitride; and silicon dioxide.

39. The method of claim 38 further comprising disposing a laminate over a surface of the handle member.

40. The method of claim 29 wherein disposing a handle member over the laminate layer comprises disposing a handle member over the laminate layer such that a surface of

the laminate adheres to a surface of the handle member.

41. The method of claim 29 wherein disposing the laminate layer over a first one of the first and second opposing surfaces of the first semiconductor structure to provide a semiconductor structure having a laminate layer disposed thereon comprises providing a laminate layer comprised of a plurality of layers.

42. The method of claim 41 wherein providing a laminate layer comprised of a plurality of layers comprises:

providing a first layer corresponding to a release layer;

providing a second layer corresponding to a metal adhesion / diffusion barrier layer; and

providing a third layer corresponding to a fusion layer.

43. The method of claim 42 wherein the release layer comprises at least one of zirconium and aluminum.

44. The method of claim 42 wherein the metal adhesion / diffusion barrier layer comprises tantalum.

45. The method of claim 42 wherein the fusion layer comprises at least one of copper; a polymer; and an inorganic dielectric.

46. The method of claim 41 wherein providing a laminate layer comprised of a plurality of layers comprises:

providing a first layer corresponding to a metal adhesion / diffusion barrier layer;

providing a second layer corresponding to a release layer; and

providing a third layer corresponding to a fusion layer.

47. The method of claim 46 wherein the release layer comprises at least one of zirconium and aluminum.

48. The method of claim 46 wherein the metal adhesion / diffusion barrier layer comprises tantalum.

49. The method of claim 46 wherein the fusion layer comprises at least one of copper; a polymer; and an inorganic dielectric.

50. The method of claim 41 wherein providing a laminate layer comprised of a plurality of layers comprises providing a laminate layer comprised of two layers with a first one of the layers corresponding to a release layer and second one of the layers corresponding to one of:

a polymer having an adhesive characteristic which allows the laminate layer to adhere to the surface of the thin film semiconductor structure;

an inorganic material; and

copper.

51. The method of claim 28 wherein disposing a laminate layer comprises providing a laminate layer comprised of a single layer having an adhesive characteristic which allows the laminate layer to adhere to the surface of the semiconductor structure and having a characteristic such that the layer releases from the surface of the semiconductor structure in response to being exposed to a release agent.

52. The method of claim 29, wherein disposing a laminate layer comprises providing a laminate layer comprised of a single layer having an adhesive characteristic which allows the laminate layer to adhere to a surface of the handle member and having a characteristic such that the layer releases from the surface of the semiconductor structure in response to being exposed to a release agent.

53. The method of claim 31, wherein removing the substrate from the second one of the first and second opposing surfaces of the semiconductor structure to provide a semiconductor-handle complex comprises removing a portion of the second surface of

the semiconductor-handle complex using at least one of: a mechanical grindback, an aqueous chemical etch; a vapor chemical etch; and a plasma etch.

54. The method of claim 33, wherein bonding the first surface of the second semiconductor structure to the first surface of the semiconductor-handle complex comprises providing bonding pads on at least one of the first surface of the second semiconductor structure; and the first surface of the semiconductor-handle complex.

55. The method of claim 54, wherein the bonding pads are provided from at least one of: copper; a polymer; and an inorganic dielectric.

56. The method of claim 34 wherein removing the handle member and the laminate layer comprises using at least one of:

an aqueous-activated method;
a vapor-activated method;
a light-activated method;
a temperature-activated method;
an ion bombardment-activated method;
an electrically-assisted method; and
a mechanical method.

57. The method of claim 28 wherein the semiconductor structure corresponds to a die-to-die semiconductor structure.

58. The method of claim 28 wherein the semiconductor structure corresponds to a die-to-wafer semiconductor structure.

59. The method of claim 28 wherein the semiconductor structure corresponds to a wafer -to-wafer semiconductor structure.

60. The method of claim 28 wherein:

providing a first semiconductor structure having first and second opposing surfaces comprises providing a first semiconductor structure having a face surface and a backside surface; and

disposing a laminate layer comprises disposing a laminate layer over the face of the first semiconductor structure to provide a semiconductor structure having a laminate layer disposed thereon.

61. The method of claim 32 wherein:

providing a second semiconductor structure comprises providing a second thin film semiconductor structure; and

aligning a first surface of the semiconductor -handle complex with a first surface of the second semiconductor structure comprises aligning the backside of the semiconductor-handle complex with a face of the second thin film semiconductor structure.

62. The method of claim 1 wherein:

the first semiconductor structure corresponds to an original semiconductor substrate;

the first semiconductor-handle complex having a substrate portion corresponds to an original-handle complex having a substrate portion;

the handle-semiconductor complex corresponds to a handle-thin film complex;

the second semiconductor structure corresponds to a second substrate.

63. The method of claim 62 wherein:

the original semiconductor substrate corresponds to a first thin-film substrate

the second substrate corresponds to a second thin-film substrate.

64. A method of providing a multi-layer semiconductor structure, the method comprising:

providing a handle member having first and second opposing surfaces; and

disposing a laminate over a first one of the first and second opposing surfaces of the handle member to provide a handle member having a laminate disposed thereon.

65. The method of claim 64 further comprising:

providing a first semiconductor structure; and

attaching the laminate to a surface of the first semiconductor structure to provide a first semiconductor structure having a handle member coupled thereto.